



Commonwealth Edison
Quad Cities Nuclear Power Station
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NJK-79-279

July 30, 1979

Mr. H. R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

REGULATORY DOCKET FILE COPY

Dear Mr. Denton:

The purpose of this letter is to inform you in accordance with Technical Specification 3.8.B.3.b., that the average release rate of radioiodine and radioactive materials in particulate form with half-lives greater than eight days, exceeded the limit stated in Technical Specification 3.8.B.3.c.(1). The average release rate for the second quarter of 1979 was 4.92 per cent of the instantaneous release limit, or 2.46 times the Technical Specification 3.8.B.3.c.(1). limit.

In the attached figure 1, the station release of radioiodines and radioactive particulates can be seen as a function of plant age. From the beginning of operation releases increased as expected to the levels observed in late 1977 and early 1978. In mid-1978 the releases took an unexplained step increase. During the past year we had assumed this increase was due to failed fuel, and primary coolant leaks. As a result, we concentrated our efforts in reducing in-plant leakage. Enclosed in Table 1., you will find a list of jobs, and the exposures involved, which were performed in order to tighten up the plant, during 1979. After these were completed, and in-plant leakage was as low as anytime previously, the station release rate was still unexplainably high.

Then, in late June, 1979, the release rate dropped by a two factor to a level approximately equal to that observed before the step increase of mid-1978. Investigation revealed that the sampling system for the Main Chimney had been worked on, and that a leak had been found. The sample system, shown in figure 2., was configured such that the flow rate was adjusted by throttling a manual valve on the sample pump discharge. The leak that was found was at a jar-type enclosure, on the pump discharge prior to the manual valve, which housed a filter element used to catch the carbon fines emitted from the carbon vane sample pump. The jar was loose in its housing, permitting a portion of the sample stream to be discharged prior to the flow meter. The net

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result was an excess of sample flow through the filter and charcoal cartridge, used to quantify releases. The measured flow was less; hence, the analysis yielded a higher than actual release rate calculation. This information was given verbally to NRC Region III management at the last meeting held with our corporate personnel.

The releases from the station during July, 1979 have been consistent with those expected from the trends observed in figure 1. The station will continue to observe plant operations and sample system performance relative to release rate variations over the next six months, to verify that the sample system was the cause of the increased release rates. Historically, radioactive particulate releases have been quantitized by using a gross Beta activity measurement. This methodology is conservative in nature resulting in an overestimation of releases. A review of 1978 release data determined that the quantity of radioactive particulates released was overestimated by a factor of two, and the per cent of the instantaneous release limit had been conservative by a factor of ~1.4.

Radioactive particulate isotopic analyses will be used to determine compliance with quarterly and annual release limits, as the data becomes available. Gross beta estimates will be used on a day to day basis in determining trends and ensuring that the instantaneous release limit is not exceeded. Table 2. shows a comparison of release data calculated by both methods.

Current station releases are approximately 2 per cent of the instantaneous release limit based on gross beta measurements. When corrected for isotopic composition, it is estimated that the releases will be less than 1.5% of that limit.

Sincerely,



N. J. Kalivianakis
Station Superintendent
Quad-Cities Station

NJK/RAF/cag

cc: NRC Region III
NRC Resident Inspector
F. A. Palmer
B. O. Lee, Jr.

Figure 1.

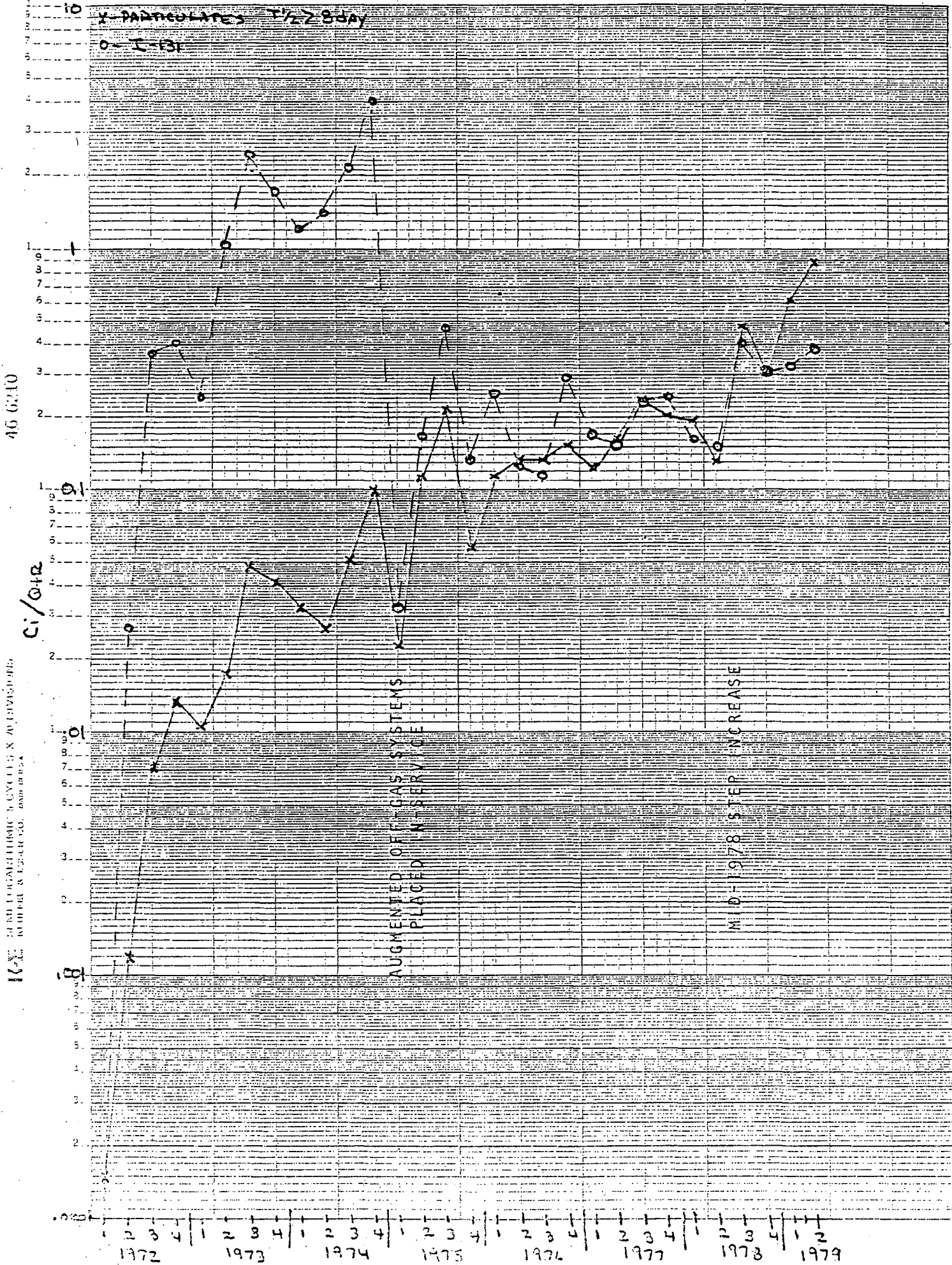


Figure 2.

From Chimney
Isokinetic probe

Return to
Chimney

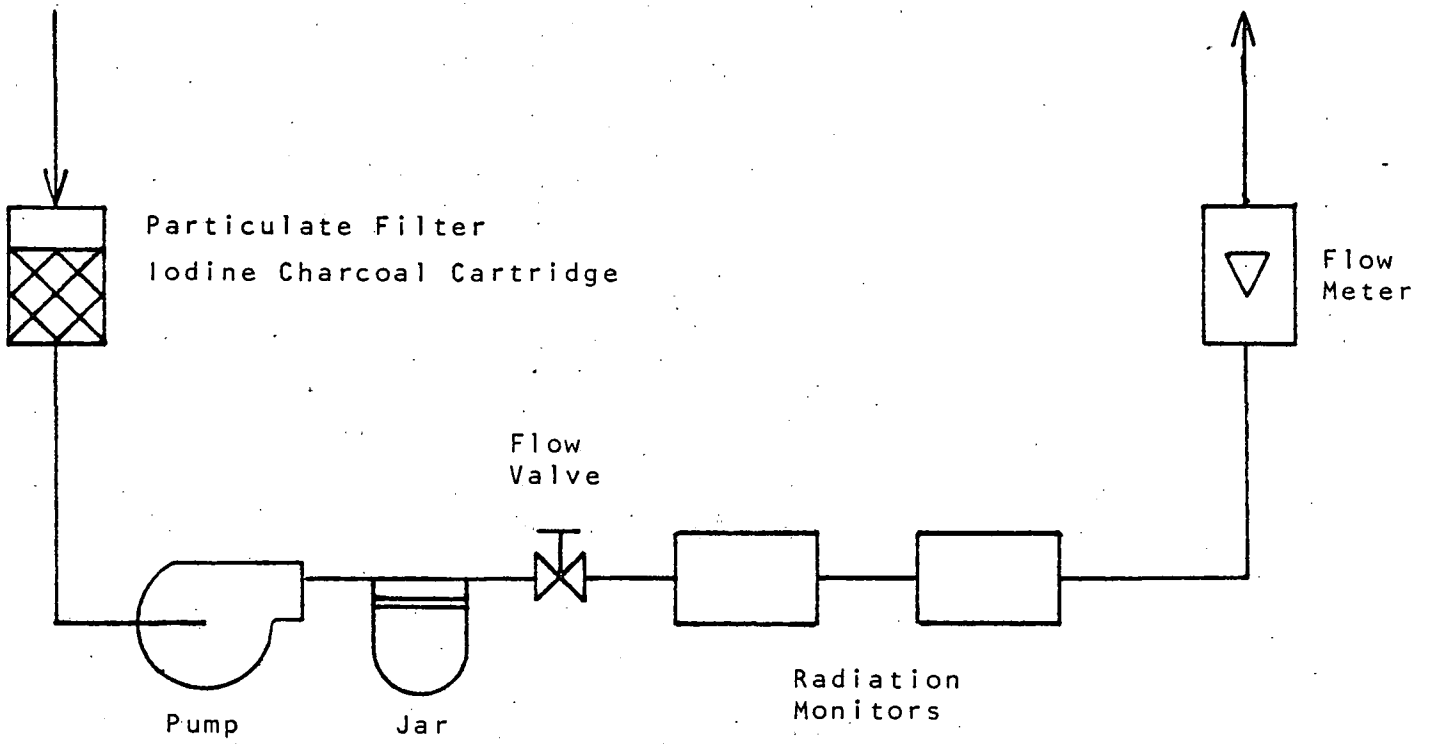


TABLE 1.

Work Request No.	Job Description	Date Completed	ManRem
2867-79	Repacked Valve 1-3599-23 MSDT to "D" Heater	5/28/79	Minimal
2659-79	Repacked Valve 1-3099-3 SJAЕ Strainer Drain	5/16/79	Minimal
2660-79	Repacked Valve 1-3099-4 SJAЕ Strainer Drain	5/16/79	Minimal
2656-79	Repacked Valve 1-3599-45 MSDT to "D" Heater	5/17/79	Minimal
2655-79	Repacked Valve 1-3599-46 MSDT to "D" Heater	5/17/79	Minimal
2657-79	Repacked Valve 1-3599-44 MSDT to "D" Heater	5/17/79	Minimal
2658-79	Repacked Valve 1-3599-43 MSDT to "D" Heater	5/17/79	Minimal
2756-79	Repaired leak on check valve from MSDT to "D" Heater	5/28/79	75 mR
2757-79	Repaired flange leak in drain line from MSDT to "D" Heater	5/28/79	75 mR
2647-79	Repacked Valve 1-3599-25 MSDT to "D" Heater	5/17/79	Minimal
2648-79	Repacked Valve 1-3599-26 MSDT to "D" Heater	5/17/79	Minimal
2649-79	Repacked Valve 1-3599-24 MSDT to "D" Heater	5/17/79	Minimal
2650-79	Repacked Valve 1-3599-23 MSDT to "D" Heater	5/17/79	Minimal
2651-79	Repacked Valve 1-3599-28 MSDT to "D" Heater	5/17/79	Minimal
2652-79	Repacked Valve 1-3599-27 MSDT to "D" Heater	5/17/79	Minimal
2653-79	Repacked Valve 1-3599-30 MSDT to "D" Heater	5/17/79	Minimal
2654-79	Repacked Valve 1-3599-29 MSDT to "D" Heater	5/17/79	Minimal
1934-79	Repacked Valve 1-1201-55A C.U. Suction	5/14/79	296 mR
2246-79	Repaired restricting orifice leak in 1D3 Heater Vent Line	5/14/79	Minimal
1658-79	Repacked Sl Steam Seal Valve	5/14/79	Minimal
2695-79	Replaced 2B Clean-Up Pump	6/18/79	5249 mR
1224-79	Repaired bonnet leak on Valve 1-3508A, MSDT to "D" Heater	5/14/79	Minimal
1173-79	Repacked Valve 1-3099-47 at Recombiner	3/15/79	Minimal
1174-79	Repacked Valve 1-3099-46 at Recombiner	3/15/79	Minimal
1175-79	Repacked Valve 1-3099-48 at Recombiner	3/15/79	Minimal
2604-79	Repacked HPCI Steam Valve 1-2301-4	5/15/79	Minimal
2612-79	Repacked 1B Recombiner Steam Supply Valve	5/14/79	Minimal
2743-79	Repacked Valve 1-3099-49 at Recombiner	5/28/79	Minimal
4799-79	Ferminated U-2 Turbine Flange	5/21/79	3457 mR
	*U-1 Turbine below Seat Drain Leak 1-3041-05		Minimal
	*U-1 Turbine Steam Seal Header Drain Line Leak		Minimal
	*U-1 MSDT leak		Minimal
	*U-2 MSDT Inlet Flange leak		Minimal

*These jobs could only have been done during an outage.

Work Request No.	Job Description	Date Completed	Manrem
2302-79	Repacked Valve 2-220-49, Reactor Head Vent	4/30/79	Minimal
2298-79	Repacked Valve 2-2301-4 on U-2 HPCI	5/04/79	Minimal
2299-79	Repacked Valve 2-1301-16 on U-2 RCIC	5/02/79	Minimal
2294-79	Repacked Valve 2-1201-148A on C.U. Heat Exchanger	4/30/79	681 mR
2293-79	Repaired leak in Clean-Up System Pipe	4/30/79	6158 mR
2221-79	U-2 RCIC Turbine Trip Valve Steam Leak	5/04/79	Minimal
1887-79	Repaired leak in C.U. System Piping	4/30/79	4639 mR
165-79	Repaired leak in HPCI Drain Line to Condenser	2/13/79	414 mR
1796-79	Repaired steam leak at HPCI Valve 2-2301-3	5/09/79	Minimal
1658-79	Repacked (added) S1 Valve on U-1 Turbine Seals	5/14/79	Minimal
1521-79	Repacked Valve 2-3001-B at U-2 SJAE	4/30/79	Minimal
1522-79	Repacked Valve 2-3099-6 at SJAE Strainer	4/30/79	Minimal
1523-79	Repaired Leak at U-1 A Preheat (recombiner) Steam Trap	3/19/79	Minimal
1525-79	Repaired Valve body leak at Heater Valve 1-3508-A	5/14/79	Minimal
1526-79	Repaired Pressure Seal Ring at SJAE Valve 1-3001-A	5/14/79	Minimal
1527-79	Repacked Valve 2-3001-A at SJAE	4/30/79	Minimal
1528-79	Repaired leak at Strainer Flange at SJAE	4/30/79	Minimal
1529-79	Repacked Valve 2-3004-B at SJAE Regulator	4/30/79	Minimal
1499-79	2A Clean-Up Pump Seal Leak Repaired	4/17/79	2579 mR
1500-79	Repaired nipple leak at Strainer on 2B C.U. Pump	4/20/79	100 mR Est.
1413-79	Repaired bonnet gasket on C.U. Valve 1-1239	3/27/79	100 mR Est.
1377-79	2A Clean-Up Pump Seal Leak	3/15/79	1185 mR
1173-79	Repacked Valve 1-3099-47 at Recombiner Preheater	3/15/79	Minimal
1174-79	Repacked Valve 1-3099-46 at Recombiner Preheater	3/15/79	Minimal
1175-79	Repacked Valve 1-3099-48 at Recombiner Preheater	3/15/79	Minimal
1152-79	Repacked PCV 1-5424-B at Recombiner Preheater	3/06/79	Minimal
1153-79	Repacked Valve at FE-1-3041-26B at Recombiner	3/06/79	Minimal
1154-79	Repacked Valve 1-3099-5 at SJAE Strainer	3/06/79	Minimal
1155-79	Replaced Gasket on Trap at Recombiner Preheater Drain	3/06/79	Minimal
1116-79	Repacked other valve at FE-1-3041-26B at Recombiner	3/06/79	Minimal
727-79	Repaired steam leak at Trap 2-4961-B in Air Ejector Room	2/14/79	Minimal
181-79	2B Clean-Up Pump Suction Line Leak	1/16/79	3180 mR

Work Request No.	Job Description	Date Completed	ManRem
164-79	Repacked 2-3541-37D Valve at MSDT	2/13/79	Minimal
116-79	Repacked Valve 1-1291-49 Pressure Test Tap	2/14/79	529 mR

Existing Leaks:

- 1) Pressure Tap on "C" steam line to H.P. Turbine (U-1) small. Requires Unit shutdown.
- 2) CV-1-3599-74B Flange - MSDT to H.P. Heaters. H₂O to steam. Clamp coming - large leak.

TABLE 2.

<u>TIME</u>	<u>Average Release Rate, % of limit</u>	
	<u>Gross Beta</u>	<u>Isotopic</u>
1978 1st Qtr	1.93	1.50
2nd Qtr	1.81	1.31
3rd Qtr	4.06	2.73
4th Qtr	3.19	2.21
1979 1st Qtr	4.43	3.25
2nd Qtr	4.92	NOT AVAILABLE